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EXAMINER
HALIYUR, VENKATESH N

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/693,416	YOON ET AL.
	Examiner	**Art Unit**	
	Venkatesh Haliyur	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 April 2006</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-16*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*1-16*</u> is/are rejected.

7)☒ Claim(s) <u>*16*</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 October 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-16 are pending in the application.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show

every feature of the invention specified in the claims. Drawings (Figs 1-3) on record do

not show each of the **"Internet link"** connected to the Internet and how **"all of the**

packets flowing through Internet links" are collected for measurement as recited in

claims 1 and 9. Therefore, the links connecting to the Internet and collection of all of the

packets flowing through the links must be clearly shown in the drawings (Figs. 1-3) or

the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3.   Claim 16 is objected to under 37 CFR 1.75(c) as being in improper form because

a multiple dependent claim recites an improper claim language **"traffic analysis of**

method of claims 9 through 15", which is unacceptable. See MPEP § 608.01(n) for

multiple dependent claims. Appropriate correction is required to claim 16.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

The claimed invention in claim 16 is directed to non-statutory subject

matter. The use of phrase "recording medium on which a traffic analysis method

of claims 9 through is recorded using program codes that are operated in a

computer" does not comply with the 101 interim guidelines (please refer to page

52 of the interim guidelines). In order for a computer program or software

instructions to be statutory it must be embodied in a computer readable medium.

Also on page 8 of the specification, the medium is defined to include a carrier

wave, thus claim 16 is nothing but a signal (carrier wave) claim.

Appropriate correction is required to claim 16.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6.   Claims 1,9 is rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. In line 2 of claim 1 the phrase (s) "a plurality of

measurement devices that collect all of packets flowing through Internet links..." fails to

particularly point out and distinctly claim the subject matter. It is not clear from the claim

or the specification as to how each of the **"Internet link"** is connected to the Internet

and how **"all of the packets flowing through Internet links"** are collected for

measurement. Appropriate corrections are required to claims 1,9.

        Regarding claims 3-5, in claim 3 the phrase "such as" renders the claim

indefinite because it is unclear whether the limitations following the phrase are part of

the claimed invention. Appropriate corrections are required to claims 3-5.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8.   Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Veres et

al. [US Pat: 6,807,156].

Regarding claim 1, Veres et al in the invention of "Scalable Real-Time Quality of

Service Monitoring and Analysis of Service Dependent Subscriber Satisfaction in IP

Networks" disclosed a traffic measurement system **(Figs 3-4)** comprising: a plurality of

measurement devices **(probes or processes monitoring traffic at points A & B of**

Fig 3) that collect all of packets flowing through Internet links **(col 8, lines 51-65)**,

extract **(capture)** traffic data required to analyze traffic from the collected packets **(item**

120 of Fig 4), and process the extracted data into predetermined flow types

(microflows, col 8,lines 66-67,col 9, lines 1-5); and an analysis server that identifies

applications **(subscriber identification and applications)** of traffic by analyzing the

traffic data transferred from the plurality of measurement devices as a whole **(col 9,**

lines 6-10), classifies the identified applications into predetermined traffic types, and

outputs the classification result **(col 9, lines 10-12)**.

Regarding claim 2, Veres et al disclosed that a plurality of time receiving devices

that extract time signals from a GPS satellite or a CDMA base station to synchronize the

times of the plurality of measurement devices **(col 2, lines 50-53)**.

Regarding claim 3, Veres et al disclosed each of the plurality of measurement

devices comprises: a packet collection unit that collects the packets flowing through the

Internet lines from router connection lines and records the collection times of the

packets **(packet filtering process, item 120 of Fig 4, col 8, lines 66-67, col 9, lines

1-5)**; a flow generation unit **(item 140 of Fig 4)** that generates flows using the packets

having the same data **(microflow processor, item 130 of Fig 4)**, such as a target

address, a protocol, and a port number **(col 6, lines 21-26)**, from the packets collected

by the packet collection unit **(captured packets stored in shared memory for flow

identification, col 9, lines 6-13)**, extracts data required for detailed analysis of the

applications after analyzing the contents of the packets, and stores the extracted data

according to the flow **(database of monitored microflows)**; and a transfer unit that

transfers the data stored in the flow generation unit to the analysis server according to a

predetermined time interval **(col 9, lines 14-45)**.

Regarding claims 4-5, Veres et al disclosed that the packet collection unit

collects the packets by using one of tapping **(probing or sniffing)**, port mirroring

(application dependent port, FTP, HTTP, TCP, col 3, lines 18-33) and signal

distribution and the data required for detailed analysis of the applications are application

signatures **(service dependent applications, RTP, FTP, WWW etc.,)** for identifying

the applications in payload of the packets **(col 4, lines 44-61)**.

Regarding claim 6, Veres et al disclosed wherein the analysis server **(microflow**

processor, item 130 of Fig 4) comprises: a data receiving unit **(network interface and**

shared memory, item 110 of Fig 4, col 9, lines 14-29) that receives the packet data

from the plurality of measurement devices **(probes or processes monitoring traffic at**

points A & B of Fig 3); a traffic analysis unit **(prefiltering processor, item 120 of Fig**

4) that analyzes the data provided from the plurality of measurement devices via the

data receiving unit as a whole **(col 9, lines 30-45)**, and classifies the applications into

the traffic types **(WWW, FTP, Streaming Media, VoIP application dependent**

module, item 140 of Fig 4, col 9, lines 5-13) according to the analysis result; a data

storing unit **(database of monitored subscribers/microflows, Fig 4)** that stores the

traffic analysis result **(delay, throughput, efficiency, packet loss etc.,)** of the traffic

analysis unit; and a user interface that displays the traffic analysis result stored in the

data storing unit to a user after processing the traffic analysis result into various types

desired by the user **(user reports, col 4, lines 44-67)**.

Regarding claim 7, Veres et al disclosed that the analysis server further

comprises a report output unit **(report, item 140 of Fig 4)** that processes the traffic

analysis result from the traffic analysis unit into a predetermined report type **(col 5,**

lines 31-67) and stores the processed data in the data storing unit **(database of**

monitored subscribers/microflows, Fig 4), and the report is displayed (microflow

record) to the user through the user interface **(col 11, lines 23-29)**.

Regarding claim 8, Veres et al disclosed that the traffic types comprise: a first

traffic type **(TCP)** whose applications are identified using only TCP/UDP port numbers

(col 9, lines 30-37); a second traffic type **(IP)** whose applications are identified by

collecting application headers and application signatures **(service dependent**

applications, RTP, FTP, WWW etc.,) that are included in payloads of the packets **(col**

9, lines 31-33); a third traffic **(UDP)** type whose applications are identified by extracting

application data from the second traffic type **(prefilteration),** since application data is

not included in reverse traffic of the second traffic type **(col 9, lines 46-54)**; a fourth

traffic type **(RTP)** whose applications are assigned predetermined port numbers are

identified based on application signature of other flows since the port numbers are

exchanged through an other control flows; and a fifth traffic type **(VoIP, item 140 of Fig**

4) whose applications are not classified into the first through the fourth traffic types **(col**

9, lines 60-67).

Regarding claim 9, Veres et al disclosed a traffic analysis method performed in a

traffic measurement system **(probes or processes monitoring traffic at points A & B**

of Fig 3) that collects packets flowing through Internet links **(col 8, lines 51-67),**

analyzes traffic, and identifies the applications of the packets **(col 9, lines 1-29)**, the

method comprising: classifying a first traffic type **(TCP)** whose applications are identified

using only port numbers included in flow data that is processed into a predetermined

type **(col 6, lines 21-26)**; classifying a second traffic type **(IP)** whose applications are

identified by collecting application headers and application signature **(application**

identifiers) that are included in payload of the packets, from the flow data remaining

after the first traffic type is classified **(col 9, lines 30-41)**; classifying a third traffic type

(UDP) whose applications are identified by analyzing the flow data remaining after the

second traffic type is classified **(col 9, lines 1-4)** and reverse-direction flow data **(both**

directions of traffic stream) of the flow that are measured at different points as a

whole **(col 10, lines 50-57)**; classifying a fourth traffic type **(RTP)** whose applications

are identified by analyzing the flow data remaining after the third traffic type is classified

and flow data measured at different points, since port numbers for the applications are

not predetermined **(col 10, lines 62-67, col 11, lines 1-2)**; and classifying a fifth traffic

type **(VoIP, item 140 of Fig 4)** whose applications cannot be identified using the flow

data remaining after the fourth traffic type is classified **(col 9, lines 60-67)**.

Regarding claim 10, Veres et al disclosed the flow data is packets having the

same target address **(destination port)**, the same protocol **(FTP)**, and the same port

number among the packets flowing through the Internet lines **(col 11, lines 34-45)**.

Regarding claim 11, Veres et al disclosed determining whether identification data

of the fourth traffic type **(RTP)** is present in traffic included classified into the first traffic

type **(TCP)** and extracting and storing the application signature of the fourth traffic type,

after classifying the first traffic type **(col 9, lines 30-37, Fig 4)**.

Regarding claims 12-13, Veres et al disclosed extracting and storing the

application signature of traffic classified into the third traffic type **(UDP)** when traffic

classified into the second traffic type **(IP)** is backward traffic of traffic classified into the

third traffic type, after classifying the second traffic type **(col 10, lines 50-67)** and

determining whether identification data of the fourth traffic type **(RTP)** is present in traffic

classified into the second traffic type and extracting and storing the application signature

(service dependent applications, RTP, FTP, WWW etc.,) of the fourth traffic type,

after classifying the second traffic type **(col 11, lines 1-12, Fig 4)**.

Regarding claims 14-15, Veres et al disclosed taking statistics on traffic classified

into the fifth traffic type **(VoIP/RTP for voice)** in order to monitor the applications and

storing the statistics result, after classifying the fifth traffic type **(col 15, lines 49-55)** and

processing the classified traffic types into predetermined report types desired by a user

and storing or providing the processed report through a user interface, after classifying

the fifth traffic type **(col 15, lines 57-63, Fig 8c)**.

Conclusion

9.   Any inquiry concerning this communication or earlier communications should be

directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616.

The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wing Chan can be reached @ (571)-272-7493. Any inquiry of a general

nature or relating to the status of this application or proceeding should be directed to the

group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

10.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197(toll-free).

Venkatesh Haliyur

Patent Examiner

05/18/07

WING CHAN　*5/22/07*
SUPERVISORY PATENT EXAMINER